of its isolation and lack of access facilities. It also would require about 500 feet of additional pump lift to transport municipal and industrial water to the areas of potential use. A dam at this site would also inundate about 900 acres of presently irrigated farmland.

The Fuller Ranch Dam Site, being located downstream from both the Cliff-Gila and Red Rock Valleys and at great distance from potential municipal and industrial water users, was eliminated from consideration on the basis of its geographic disadvantages with respect to increased water use and other benefits in the State of New Mexico. A dam at this site would inundate about 1,400 acres of irrigated lands.

In general, the rate of evaporation would be greater in the locations of the downstream sites. Flood protection to the important developed lands of the Cliff-Gila can not be provided by reservoirs at the Cliff, Conner, or Fuller Ranch sites. Our studies of the alternative sites also are not to sufficient grade to ascertain that the foundations for the dams and reservoir areas are adequate.

We have not carried the studies of the alternative sites to the degree of refinement which would provide quantiative statements of current costs, benefits, and other factors.

Answer No. 6.—(a) No feasibility-grade hydrogeologic and ground-water studies of the Upper Gila River Basin have been made. It is our judgment, however, that, on the basis of reconnaissance studies, it would not be possible to sustain pumping an additional 18,000 acre-feet per year from the area. The two proposals, therefore, are not comparable.

It is doubtful that adequate well yields and adequate recharge in periods of high flow could be obtained in reasonable proximity to the potential water requirements. Also, operation of the suggested well fields in a manner that would not affect downstream rights would be extremely complex. For example, at low flow, it would be necessary to pump from the well systems into the river an amount equal to the computed effects of earlier pumping from the wells on river flows. Reliable computations of such effects, acceptable to downstream interests, might pose a difficult problem.

(b) We are now engaged in authorized feasibility investigations of the potential Upper Gila River Project, which embraces that part of the Gila River Basin in Arizona and New Mexico above Coolidge Dam. Consideration is being given in these studies to many alternative plans for increaisng water use in both the Arizona and New Mexico portions of the Upper Gila River Basin involving additional storage works, phreatophyte eradication, canal and lateral lining, and exchange arrangements with downstream water users to be supplied directly from the Central Arizona Project aqueduct system. Reconnaissance plan formulation studies evaluating alternatives which have so far been completed have included storage combinations without the proposed Hooker Dam and Reservoir, but all have demonstrated less favorable results than alternatives which include Hooker Dam and Reservoir.

Answer No. 7.—This amount was established by mutual agreement between the States of Arizona and New Mexico after a long period of negotiations. Our Bureau was not a part of these negotiations but, upon request, furnished both States such data as were available.

Answers Nos. 8 and 9.—Our reconnaissance studies indicate a potential demand for about 10,800 acre-feet of additional municipal and industrial water, leaving a balance of 7,200 acre-feet for reservoir evaporation, irrigation, fish and wildlife, recreation, or other uses. The amount of reservoir evaporation would depend upon the reservoir capacity and operating criteria. These figures were made available to both Arizona and New Mexico during the aforementioned negotiations. The figures or breakdown result from a determination of the potential need for M&I supplies.

Answer No. 10.—It would be our intention to give the first consideration to M&I uses in providing a water supply of any quantity. To the extent that water is available in excess of current M&I needs, it would be used in an interim irrigation supply.

Answer No. 11.—(a and b) Hooker Dam would not be a viable development insofar as its contemplated accomplishments are concerned without the Central Arizona Project. Hooker Dam, on the contrary, is not necessary to the engineering and operating viability of the other portions of the Central Arizona Project. Hooker Dam, as embodied in H.R. 3300 and S. 1004, however, is necessary to accommodate an exchange of water for the benefit of New Mexico. The physical